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**(54) MANUFACTURE OF
SEMICONDUCTOR DEVICE**

(57) Abstract:

PURPOSE: To complete treatment of manufacturing and inspecting steps for each substrate, by a method wherein manufacturing order and conditions are previously printed or written with pattern symbols on the surface of a semiconductor substrate and are read in the manufacturing and inspecting steps.

CONSTITUTION: The reverse surface of a silicon substrate 1 is bombarded with a beam of ions large in mass from an ion beam source 2 to write data representing the manufacturing process order with a numeral, bar code or bit pattern signal. The crystalline structure of the silicon substrate surface bombarded with the beam is disordered and transformed into a mosaic structure. The crystalline structure is not restored by an ordinary heat treatment, so that the mosaic structure remains until the end of the process.

If infrared rays are applied to the crystal portion having the crystalline structure transformed into the mosaic structure, the light reflected therefrom is different from the light reflected from the other portions. Therefore, it is possible to read the manufacturing data. On completion of registration, the silicon substrate 1 is transferred to a treatment step, where the manufacturing data is read. When the data is sent to a central control unit, treatment conditions and method corresponding to the silicon substrate 1 are sent back, and treatment is carried out. Thereafter, data on the contents of inspection of the treatment is sent for inspection.

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